

CORN CHEAP ENOUGH TO BURN

Corn-Burning Stoves Coming On Strong

With corn prices hovering down around the break-even cost of production value, and winter heating prices skyrocketing out of sight, some farmers are finding that it's cheaper to burn some of last year's bumper crop rather than sell it on an already overloaded market — and pay expensive fuel bills besides.

To meet the demand, several manufacturers are building stoves and furnaces to burn corn, along with pelleted stalks, wood chips and similar materials as fuel.

Kruse Manufacturing, of Lake View, Iowa has been building corn-burning stoves since the summer of 1980. (FARM SHOW reported on the

Then, the carbon releases combustible gases and oxygen which produce most of the heat. "It burns with a beautiful blue flame which indicates that it's a very clean combustion," notes Kruse.

A 488 cfm fan on the medium-sized Kernal model moves heat through existing ductwork into the area to be heated. The stoves themselves are built of ¼-in. steel with a 14 ga. steel shroud over the outside.

"You can use one of these stoves in most average size homes. It will replace a 125,000 btu propane furnace," Kruse points out. "You can't burn corn or most other biomass fuels in air-tight stoves because they don't provide enough oxygen. The fuel just smolders in them," he adds. Another problem is that the intense heat from corn requires stoves built of high quality steel that won't buckle or melt.

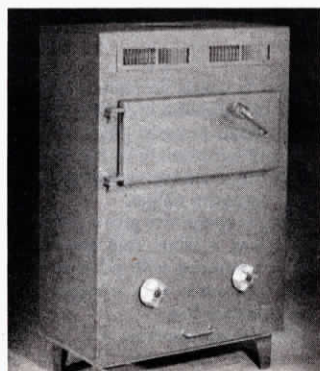
The three Kernal models sell for \$595, \$695 and \$849, respectively. Kruse figures corn is approximately equal to \$3.60 worth of heating oil in terms of heat energy available as a fuel.

For more information, contact: FARM SHOW Followup, Kruse Mfg., Hwy 71 East, Lake View, Iowa 51450 (ph 712 657-2628).

Another manufacturer of corn-burning stoves is Solid Fuel Systems, of Spicer, Minn. The company's commercial-sized heating systems are available in 500,000 and 1 million btu models.

The Solids Fuels stoves are built to burn almost any burnable material including wood, coal, corn, corn cobs, wood chips and even pelleted turkey manure! An automatic stoker is available.

The company's Marlys Flickinger notes that Solid Fuel Systems is en-



At \$2.50 a bu., corn is cheaper as a heat source than fuel oil at 90 cents a gal. It figures out to a value of \$5.95 for corn, verses \$6.43 for fuel oil per million btu's of heat.

prototype Kernal model in Vol. 4, No. 5, 1980.) Sales have been booming ever since.

"Despite a 5-month shutdown due to a fire at our plant early in 1981, late season sales have made 1982's outlook even better than 1981. We've had quite an upturn ever since corn peaked at \$3.30," reports Gary Kruse, company owner and designer of the Kernal.

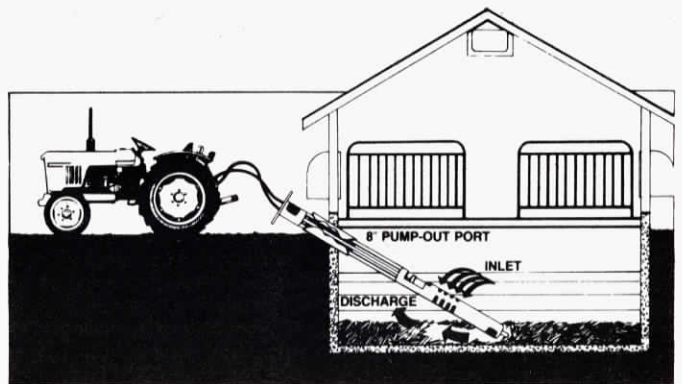
Since FARM SHOW'S initial report, Kruse has expanded the line from a single model to 3 models — the Kernal Jr., the Kernal and the Kernal Sr. They are capable of heating 1,000, 2,400 and 4,000 sq. ft., respectively. All three models are top-loading, hand-fed units that will burn up to 18 hours on a bushel of shelled corn or 5½ hours on ear corn. The Kernal model holds just under 1½ bu. of shelled corn. All models have also been satisfactorily tested with wood, coal, cubed corn stalks, pelleted soybean stubble, wood pellets, sunflower hulls and even soybean screenings.

The Kernal family burns corn by permitting air to flow through the bottom front of the stove and over the top of the fire. This permits the fuel to burn itself into a mass of carbon, first.



Solid Fuel Systems furnace burns corn and other pellet-like fuels. Automatic stoker is optional.

couraging many of Northwest Minnesota's turkey growers to install corn or manure burning stoves for heating chick and grower barns. "We



The Brokaw agitator is powered by a durable hydraulic piston motor. It's designed to operate efficiently off the hydraulics of your smaller tractors — no need to tie up larger machinery.

ALSO BEING TESTED ON "SLUGGED" SLURRY TANKS

Sludge Eliminator For Manure Pits

"It's designed as a one-man operation," says Kim Brokaw, designer-manufacturer of an agitator capable of agitating and eliminating solid build-up problems in hog confinement pits through the 8 in. pump-out ports. "The sturdy, yet light-weight (135 lb.) construction enables you to move from one port hole to another for complete agitation," he notes.

The Brokaw Agitator is powered by a hydraulic piston motor, operating at up to 3,000 RPM and developing 10½ hp. Rather than relying solely on an impeller to attempt to push around the heavy sludge at the bottom of the pit, the unique agitator uses the liquid portion of the pit to break up the solids to an even consistency that can be removed with a vacuum tank.

Three times the area of inlet, in relation to the area of discharge, forces a restriction thru the Brokaw Agitator resulting in a tremendous pressure being forced out by the unit's drive mechanism. Brokaw points out that this pressure is used to move a large volume of manure to break up the solids. "If we were to rely strictly on pressure, the agitator's discharge would have to be pointed to every square inch of the pit. Rather, we use the pressure to move a large volume of manure. It's volume that breaks up solids and agitates liquid manure."

The Brokaw Agitator has success-

fully been used in finishing units with better than 3 ft. of solids, reaching a distance of up to 40 ft. in each direction from one port-hole. Although the unit's easy portability enables the operator to move from one port-hole to another for complete agitation of any size pit, the Brokaw Agitator has agitated many farrow-nursery set-ups with approximate dimensions of 44 by 24 ft. from one port-hole only. The area of agitation depends on the dimensions of the pit, the consistency of the manure, and the amount of solid build-up. Brokaw reports that their unit has replaced several high pressure recirculating pumps that have been sold by other companies.

The Agitator is coated with a durable, braked-on hardened finish which protects it against the corrosiveness of manure, as well as scratches.

The standard size Agitator is 11½ ft. in length, with shorter or longer units available on request. The standard size unit may be used in 4, 6, 8 and 10 ft. pits as long as an 8 in. access, such as a PVC or clay pump-out port, is available. The unit may also be used inside buildings, by lowering it down through a removed slat.

For more details, contact: FARM SHOW Followup, Brokaw Industries, 131 N. Sycamore St., P.O. Box 633, Monticello, Iowa 52310 (ph 319 465-5171).

installed a system for burning pelleted turkey manure on one turkey brood farm and they've been able to save over 60% on their propane costs over previous years," Flickinger points out. "Also, the building stays much drier and the litter keeps dry enough to burn right after pelleting."

Besides turkey barns, Flickinger recommends the Solid Fuels Systems stoves for drying corn or for heating farm workshops.

"An extra advantage to these stoves

is that they install outside the home or building. They're insulated and shrouded with a protective metal jacket to help keep in the heat. This reduces the risk of fire damage, which the insurance companies often take into account," Flickinger told FARM SHOW.

For more information, contact: FARM SHOW Followup, Solid Fuel Systems, Inc., Spicer, Minn. 56288 (ph 612 796-5141).